

Remarks

35 U.S.C. §103

On page 3 of the Office Action, claims 1 to 2 and 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Speer et al. (US 5529833) in view of Putnam et al. (US 6794191) and Inoue et al. (US 5358876) .

(Applicants bring to the Examiner's attention that there is no formal rejection of claim 31 in the body of the Office Action, although the cover page of the Office Action includes claim 31 in the rejection).

Applicants respectfully traverse this rejection, and rely on the arguments presented in applicant's previous response of 26 October, 2006.

Applicants respectfully submit that Putnam et al. discourage and teach away from "printing" or "painting" techniques for using the sensors of Khalil. Several undesirable consequences of such an approach are disclosed, including migration of process additives, flammability of solvents, etc. While flexible materials are referred to in these particular passages, Putnam et al. refer elsewhere to extrusion, molding or injection molding processes (col. 3, lines 7 to 9) which of course can result in either flexible or rigid products. Putnam et al. also refer to films as well as "other polymer shapes" such as caps, cap liners, lids, bottles, and rigid containers (col. 5, lines 14 to 16). Thus, in terms of the above cited passages of Putnam et al., with respect to the undesirability of printing or painting the optical sensors of Khalil, no distinction is made in the reference based on flexibility or rigidity of the "polymer shapes". Indeed, at least some of the undesirable consequences listed in the reference, such as flammability of solvents, have to do with factors independent of package type.

Putnam et al. instead promote dissolving the porphyrin sensors *in* the polymer. This is viewed by Putnam et al. as a key element of their invention:

As noted in Khalil (U.S. Pat. No. 4,801,655), a key element to creating useful luminescent oxygen probes from organic indicators such as porphyrins and chlorins is the complete dissolution of the indicator in the polymer.

[Putnam et al. at col. 2, lines 43 to 47]

Applicants submit that there would therefore be no motivation to combine the teachings of Putnam et al. with Speer et al. and/or Inoue to provide a rigid container comprising:

- a) an oxygen barrier having an oxygen transmission rate of no more than 100 cc/m<sup>2</sup>/24hr at 25°C, 0% RH, 1 atm (ASTM D 3985);
- b) an oxygen scavenger; and
- c) an oxygen indicator comprising a luminescent compound;

wherein the oxygen indicator is substantially shielded by oxygen barrier layers from oxygen in the environment surrounding the container, and from oxygen in any headspace within the container; and wherein the oxygen indicator comprises all or part of a printed image.

To combine Speer et al. with both Putnam et al. and Inoue et al. to arrive at the claimed combination of claim 1 is not appropriate. This approach ignores the clear teaching away found in Putnam et al. with respect to printing and painting techniques for applying the sensors to the package.

Applicants direct attention to remarks appearing in Section 6 of the Office Action:

Applicant has argued that Putnam teaches away from a printed image. However, the disclosure (column 1, lines 54-65) is in reference to the prior art not Putnam's own invention. Although Putnam do not provide an image per se, there is no direct teaching away from providing an oxygen indicator as an image. Note that the act of printing is a method limitation which does not carry patentable weight (2113). The question of patentability is whether it is obvious to provide the oxygen indicator as an image.

Applicants take issue with this statement on two grounds.

First, this statement shows that the Office Action is impermissibly relying upon only a portion of Putnam et al., without considering the reference as a whole, as required under the law. A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) ( MPEP 2141.03 VI.) The Office Action has not directly responded to the fact that Putnam et al., considered as a whole, teaches that

[d]ue to the nature of most suitable organic solvents, *direct printing* or painting onto flexible packaging using these sensor solutions has the potential for changing the engineered properties of these multilayer films including delamination, cracking, changes in film orientation and migration of processing additives. These problems provide significant hurdles to practical implementation of solvent-based casting, paint *or printing* methodologies. Other significant problems are inherent to solvent use, such as, flammability of the solvents, hazardous waste storage and removal, and the elimination of toxic fumes for worker safety.

[Emphasis added]

Putnam et al. at column 1, lines 54 to 65

and that

Application of even a thin polymer film in the sealing area can result in poor heat seals and package failure. Therefore, any process using “painted” sensors would require more elaborate film production equipment and orientation of the film during packaging than is commonly found in the industry.

Putnam et al. at column 2, lines 14 to 19

Putnam et al. teach that “any” process [not limited to any particular process of the Putnam invention itself] using “ ‘painted’ sensors” requires more elaborate film production; they also refer to poor heat seals and package failure. Surely this is a classic case of teaching away, of discouraging, by warnings of failure or significant technical disadvantage, the skilled artisan from proceeding in a particular direction. The law makes it clear that such warnings need not be confined to any particular part of the specification. Thus, the statement that there is no direct teaching away [in Putnam] from providing an oxygen indicator as an image is inaccurate.

Second, the latter part of this statement misconstrues the amended claim language. Claim 1 as amended now requires that the oxygen indicator comprises all or part of a printed image. The latter part of paragraph 6 of the Office Action states that the act of printing is a method limitation which does not carry patentable weight, and refers to 2113. This statement disregards the fact that claim 1 is an article claim, not a method claim. Nothing in claim 1 refers to a step of printing the rigid container. Claim 1 does include an added element, an oxygen indicator comprising all or part of a printed image. This is a physical object, a component or element of the overall claimed rigid container. It should legitimately be given patentable weight.

Applicants respectfully ask for allowance of the claims as now submitted.

If any fees are deemed due, please charge same to Deposit Account No. 07-1765.

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